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ABSTRACT

This discussion of Finnish orthography notes the regularity of the language in the relation of spelling and sounds. Finnish orthography has been depicted as having no inconsistencies in the spelling; it is phonological or phonemic. The principle of phonological spelling involves two requirements: (1) the actual phonological condition, and (2) the principle of the linearity of the segments. Contrast is made to English orthography, an example of an inconsistent spelling convention. Weak points of Finnish orthography, especially as regards children's learning of reading and writing, are considered. Cases where the spelling of Finnish deviates from its "convergence to pronunciation" concern those cases where there is linguistic information in speech that cannot be conveyed by writing or where writing does not display all the phonological variations in the language. The adoption of many foreign words wherein the relation of letters to sounds deviates from the native system, is described. Implications of Finnish orthography for foreign language learning are also addressed. (SW)

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# ON THE PRINCIPLES OF FINNISH ORTHOGRAPHY [1]

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

In general, Finnish orthography has been given excellent marks. Not only have Finnish writers praised it, but approving comments have also been made by foreign authors. In his textbook of phonetics *Vademekum der Phonetik* (1950:39) Eugene Dieth quotes the classification of orthographies of various languages, originally drawn up by Lundell. The spelling conventions are classified according to the relation of pronunciation to spelling in each language. Serbian and Finnish have - according to this classification - an "excellent" orthography; Croatian, Czech, Polish, Italian and Spanish "quite good"; Swedish and German "rather poor" and, finally, English and French "abominable". In his *Linguistics across cultures* (1957:96) Robert Lado mentions Finnish, Turkish and Spanish as examples of languages, in which the writing systems are close to ideal as regards such a point as regularity in the relation of spelling and sounds. Dwight Bolinger in *Aspects of Language* (1968; 1975:469-470) mentions Spanish, Czech and Finnish as languages, in each of which the writing system is close to the ideal of phonemic writing. In *Comparative reading* by John Downing (1972:217-) Finnish orthography is discussed fairly extensively, the argumentation being mainly on Kyöstiö's article (1972) on the topic (see also Downing 1973).

Lee (1960:13), also, gives Finnish and Turkish as examples of languages that are most regularly spelt. The Finnish spelling system has also been frequently discussed by O.K. Kyöstiö in various contexts. According to him (1967:71), Finnish orthography is phonetic, by which he means that there are no inconsistencies whatever in the spelling and that the position of a grapheme in a word does not influence its pronunciation

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[1] This is a slightly enlarged version of a paper published in Finnish in *Osmo Ikolan juhlakirja*. Turku 1978.

(see also Kyöstiö 1972). According to Fred Karlsson (1976:19) Finnish orthography is considered one of the best existing spelling conventions because it is consistently phonological. The notion of the ideality of Finnish orthography seems to have been contested only by Thomas A. Sebeok (1944). Various points of view presented by him will also be discussed later on in this article.

The comprehensive general works on Finnish grammar deal with the spelling system only briefly. Ikola, in his manual of the Finnish language (1968:103) considers the Finnish spelling system to be "exceptionally simple and explicit, since Finnish is pronounced in the same way as it is spelt, generally letter by letter". He then gives six points where "spelling diverges from the pronunciation". They are the following: (1) the irregular spelling of /ŋ/, (2) the variation in spelling between *np - mp* (eg. *tulenpa* /tulempa/ 'I will come' *lähden pois* /lähdem pois/ 'I will go away' but *suurempi* 'greater' *lampaat* 'sheep') (3) the variation between *nl - ll* and *nn - nn* *samanlainen* 'same kind of', *suurenmoinen* 'fantastic' despite the pronunciation /samallainen/, /suurenmoinen/ (4) the alternating spelling of *uv - u* and *ij - i* (cf. also the vagueness in pronunciation): *kauan* 'for a long time' and *laueta* 'to go off, to explode' are spelt without the letter *v* ; variation between *kyniä* 'pens' ~ *kynijä* 'one who plucks' and *siasta* 'from a pig' ~ *sijasta* 'instead of' is usually present only in spelling. (5) the inflections of words like *vuoka, ruoka, lieka* : *ruoassa* 'in the food' *vuoassa* 'in a cake tin' *lieassa* 'tethered' are pronounced /ruuassa vuuassa liiassa/ and (6) the fact that consonant doubling caused by a 'rudimentary' morphophoneme called "jäännöslopuke" is overlooked in spelling on a word boundary and in connection with an enclitic suffix (eg. *tulepa* 'come' /tuleppa/, *tule pois* 'come away' /tuleppois/. Similarly, Penttilä in his extensive textbook of Finnish grammar (1963: 36-39) mentions the above exceptions, giving futher examples.

The notion of the excellence of the Finnish spelling system has been hailed with enthusiasm among writers on the speech understanding systems of computers. In *The Electronic Revolution* by Handel there is a chapter on speech recognition devices in which the following sentence appears - obviously added to the Finnish edition by the translator: "Finnish would be much easier for the computer to recognize than English since it is pronounced the way it is spelt". Naturally, the spelling of a language does

not affect the ease of automatic speech recognition in the least.[1] In a recent article the science editor of a newspaper introduced a speech synthesis project in which the main goal was to produce a device that could convert writing to speech. Some of the problems involved in the construction of a device of this kind are easily solved as far as Finnish is concerned: a particular sequence of graphic signs given as an input to the computer can always be converted into an identical sequence of sounds in speech. According to this article the introduced solution is particularly suitable for a computer that speaks Finnish since "Finnish is by and large the only language that is pronounced the way it is spelt with utmost accuracy". There have been many instances of a still worse confusion in concepts like 'language', 'writing' and 'speech': occasionally one comes across claims like "the Finnish language has been converged to pronunciation". From the context one can conclude that 'language' here means 'orthography'.

Writing can never get converged to pronunciation in a phonetic sense - not even in the finest transcription (cf. Wiik 1973:12-14). It therefore seems to be appropriate to consider what is really meant by "phonetic spelling" or by claims like "writing is regular if compared with pronunciation", or "writing is converged to pronunciation". Even the so-called phonetic transcription in which the relationship of sounds and spelling is reflected at its most concrete, is seldom capable of representing in an accurate way the variation and alteration of sounds that regularly occur in physical speech. Man has a tendency - even as a transcriber - to organize his auditory perception according to the functional categories of the language in question. A judgement on the quality of a sound, its duration or some other phonetic parameter is seldom based entirely on the auditory perception of the transcriber. He first identifies a larger, functional linguistic unit, has certain expectations of its morphological, phonological and phonetic structure based on his linguistic intuition,

[1] For a lapse of thought on the part of another author see *Foneetikan paperit*, Oulu 1973. The author who discussed automatic speech recognition based his arguments on the notion that Finnish orthography is "regular". The "regularity of speech" or the ease of speech recognition processes do not, of course, depend on the orthography. A further lapse could be found in a survey of the goals of language teaching in Finland in which it was stated that the English language is "unphonetic". What was meant was naturally that English orthography is unphonemic.

and, according to these expectations, he then interprets the phonetic reality (cf. Oller & Eilers 1975). One could even claim that a phonetic spelling that would follow the pronunciation but would overlook the linguistic intuition of Man concerning the functionally meaningful structures of language would be very difficult for someone to learn. The variants of 'phonetic' transcription that are used in dialectology or language teaching (eg. pronunciation drill books or dictionaries of English) are typical examples of phonological transcriptions to which a number of signs of certain allophonic features have been added (cf. Lehtonen, Sajavaara & May 1977:52-59). Theoretically, phonetic transcription can be defined as a writing system which can be employed without depending on language-specific information. The principle of phonetic transcription has no practical significance, and the orthographic system of Finnish is by no means phonetic.

2

An orthographic code in which every meaningfully distinctive unit has an equivalent in spelling is called phonological or phonemic spelling. It is not possible to employ phonological spelling "solely on the basis of auditory information" as has been claimed sometimes (cf. Ahvenainen & Siirilä 1977:25). In order to apply phonemic spelling one has to master the phoneme paradigm and the phonotactic rules at the level of word phonology as the pronunciation of a given language, or its phonetic code. But the correct spelling of the word does not necessarily presuppose that its meaning is known. When a child learns phonological spelling he not only has to learn letter/sound relationships or the distinctive shape of the characters, but the potential phonological structures of words in his language as well and the restrictions and predictabilities of these structures.

The principle of spelling, given its final shape by the Ancient Greeks, is now known as phonological spelling. Its influence on the expansion of alphabetic writing that employs the Latin or Cyrillic alphabet and also on the expansion of the whole of western society has been enormous. Phonological spelling was also thought an ideal spelling convention by the traditional structuralists. In an ideal spelling convention - according to this traditional "taxonomic" approach - separate letters are used for speech sounds that represent separate phonemes. The sounds that are variants of

one and the same phoneme must always be indicated with one and the same letter. Thus, a one-to-one relationship must prevail between the phonemes of a language and the symbols of its orthography. (Wiik 1973:13; see also Pike 1947:208-)

Ultimately the principle of phonological spelling involves two requirements: (1) the actual phonological condition and (2) the principle of the linearity of the segments. According to the first condition every phoneme of a language must have an equivalent in the orthographic system and, conversely, a particular written utterance can be converted into one particular sequence of phonemes only. In other words, each written word can be pronounced in only one way. The segmental principle says, in short, that the sequence of letters in writing has to be identical with the corresponding sequence of segments at the level of surface phonology. As regards the first requirement eg. the string of letters <sch> in German as a symbol of /ʃ/ and the letter <x> as a symbol of /ks/ are quite acceptable since these characters or character sequences always have only one phonological equivalent. The way to indicate the first syllable vowel in German words like *nehmen, fühlen* is also admissible because the combination <vowel+*h*> is used systematically in German orthography to denote a long ('geschlossen') vowel. The ways of symbolizing /ŋ/ in Finnish orthography (ie. <nk> pro /ŋk/ as in *kenkä* /keŋkä/ 'shoe', <ng> pro /ŋŋ/ as in *kengän* /keŋŋän/ 'of a shoe' and <gn> pro /ŋn/ as in *signaali* /siŋnaali/ 'signal') are also phonologically unambiguous, since none of these symbolizations are used to indicate any other phonological structure. As regards the phonological condition the English spelling in words like <pale> <ride> <tone> is also acceptable, since the letter combination <V(C)V> always implies that the vowel is long: /peɪl/, /raɪd/, /taun/ vs. <pal> <rid> <ton> /pæl/ /rɪd/ /tɔn/. Traditional criticism of spelling conventions of various languages has been focused mainly on cases, similar to those above, where the relationship between the graphemic and phonemic levels violates the segmental principle (see Dieth 1950: 86-). The brief comments on the orthography in the textbooks of Finnish grammar are usually limited to the spelling of /ŋ/ which is - according to these grammars - the only actual flaw in Finnish orthography. The fact that the final <e> in English words like <pale ride tone> has been called "mute e" reveals that the interpreter of the graphemic code may

not have fully realized the existence or function of graphemic structures consisting of more than one symbol.

The principle of phonological spelling would hardly be as widely spread and applied as it is now if it did not possess some remarkable advantages compared to other spelling conventions. The "fit" of a spelling system can be evaluated from four points of view: (1) how easily it can be applied in the creation of an orthography for a language that previously has none (2) how easy it is from the point of view of learning to read and write (3) how efficient and appropriate it is in practice from the point of view of the psycholinguistic skills and faculties of Man and (4) how easily it can be adapted for use by a specific linguistic and cultural community. The following arguments can be stated for the phonemic spelling. The phonemic level, ie. the level of invariant distinctive segments, is obviously one of the most uncomplicated levels in the perception of linguistic structures and units on language. The application of eg. morphophonological spelling would demand - if compared with the phonological spelling - a profound knowledge of the historical causes for the morphophonological alterations in a language, if it is meant to fulfil the requirement of naturalness.

Since the use of phonological spelling involves only the analysis of the simplest and most peripheral patterns in the structure of the language in which we write it is fairly easy to apply it to new languages (cf. Pike 1947:208-). Obviously for the same reason, ie. because of the peripheral nature of the linguistic reference level in writing, which makes its application to new languages so easy, the phonological spelling also seems to be indisputably well-adapted as regards the rate and ease of learning to write (Downing 1972:217- ; Read 1973:18). Children who speak a language which is phonemically spelt learn to write more rapidly and easily than children who speak a language in which the relationship between orthographic symbols and speech sounds is irregular or based on more complicated means of correspondence. The principles of Finnish spelling convention are obviously successful, or even optimal for the purposes of elementary education.

In both the history of western alphabetic writing and in the application of the writing systems of classical languages to the spelling of new languages, one of the leading principles has always been that every distinctive speech sound of a language must have a corresponding symbol in the alphabet.

Some languages have arrived at solutions that are based on some other principle instead of the phonemic one. It might have been found more difficult to conform the sound system of some languages to the Latin alphabet (eg. because of the greater number of phonemes or the presence of phonological suprasegmental properties). However, the most important reason for the alienation of the orthographies from the phonological closeness to pronunciation - this has happened in various languages in Europe that have an old cultural and literary tradition - is the fact that writing tends to change very slowly. Phonological spelling is both natural and appropriate for the purposes of a new orthography. This does not, however, imply that an old, well-established orthography is unnatural. English orthography, for instance which - because of its own inertia- reflects patterns which existed in the language before certain phonological changes took place is inherently natural in these points and in harmony with the linguistic intuition of the speakers, even though it is no longer phonological from the taxonomic point of view. Nevertheless, English orthography is a favourite example of an inconsistent or even chaotic spelling convention.

It has been claimed that the following construction (presumably originally presented by G.B. Shaw) is a good example of the inconsistency of the system: The claim is that the word *fish* could also be spelt <ghoti> since <gh> is a symbol of /f/ in *laugh*, <o> is a symbol of /i/ in *women*, and <ti> serves as a symbol of /ʃ/ in *nation*. Naturally, the whole construction is erroneous throughout: <gh> is never used as a symbol of /f/ word-initially, the correspondence <o> - /i/ occurs only in the word *women*, and <ti> as a symbol of /ʃ/ can occur only at the beginning of an unstressed non-initial syllable. Just as unrealistic is the constructed string of letters <thvrenzavce> which should result in silence when pronounced. It is compiled of the "dead" or "silent" letters of certain place names that have retained their archaic spelling (viz. Strathaven,

Milngavie, Cirencester, Culzean, Abergavenny, Leicester). Yet English spelling has some features that may seem strange for the user of the Finnish spelling system. One of these is the fact that English is not spelt according to the letter/sound -principle exclusively.

Chomsky & Halle (1968:49) have argued that "the fundamental principle of orthography is that phonetic variation is not indicated where it is predictable by general rule". They also argue that "orthography is a system designed for readers who know the language, who understand sentences. Such readers can produce the correct phonetic norms, given the orthographic representation and the surface structure, by means of rules that they employ in producing and interpreting sentences". Thus, English orthography is in fact very close to an optimal spelling system (cf. also Carol Chomsky 1970).

When evaluating the efficiency of various spelling conventions from the point of view of readability, the leading position of the phonological letter/sound principle is no longer unchallenged. The reading of written text can not be seen as a kind of decoding process in which the letter symbols in the text are recognized symbol by symbol, proceeding from left to right, and then turned into a corresponding phoneme sequence (=the model of phonological transmission), after which the structure of the sequence is recognized and the correct meaning is assigned to it. If this was the case, phonological spelling would undoubtedly be the best alternative. Psycholinguists have shown, however, that to read is not to decode a letter sequence into speech. The reader not only uses visual identification cues for the words and phrases present in the graphic representation, but he also employs his knowledge of the context and his knowledge of the syntax and semantics of the language. The goal of the reader is, above all, to recognize the meaning, not to recognize separate words or letters; the recognition of the meaning of a linguistic unit can precede the recognition of a particular word in it. Reading - as well as auditory comprehension - is a dynamic linguistic process, in which only a small amount of the information needed to reach the meaning, is included in the letter strings of the text (see Cooper & Petrosky 1976; Massaro 1975:241- ; Platzack 1973; Spoehr & Smith 1975). The visual cues in writing therefore consist not only of graphic distinctive features of letters but also of "images" made up of letter strings. From the point of view of rapid

reading it is mandatory that in a good orthographic system the same meaningful unit must always be indicated with the same letter sequence. From this point of view English orthography is nearly optimal: words derived from the same stem but with varying phonological representations are spelt in the same way as regards the stem (eg. *photo*, *photograph*, *photographer*). The spelling of prepositions and suffixes, that are important for the recognition of meaning, is also very consistent and the "irregular" spelling of various common lexical items increases their visual recognizability (cf. Chomsky & Halle 1968:49; Bolinger 1975:480- ; Cronnell 1972; Reed 1970). [1]

The supporters of the English spelling convention have emphasized that an orthography which does not specify the surface structure of phonological representations allows a large variation between the dialects and sociolects without becoming controversial to any dialectal variant. To convert the above-mentioned notion to apply to phonological spelling it must be concluded that Finnish orthography would necessarily have a very strong normative ingluence on the spoken language and also a levelling influence on the phonetic variation between dialects. A phonological spelling convention in which the "correct" representation of a morpheme is given letter by letter is undoubtedly one of the most influental factors that smooth out the differ nces between the geographical dialects of Finland.

4

It is well-known that the phonological character of Finnish orthography has been aided by the fact that the literary tradition was born fairly late in Finland and thus the norms of written language were fixed only fairly recently. The "purity" of Finnish orthography - above all due to the comparatively recently established norms - can also be, at least in part, attributed to the Swedish language, which for centuries served as a vehicle of literary culture in Finland instead of our mother tongue.

[1] It sould be pointed out, however, that there are no experimental data to show that the interpretation of the word stem and the recognition of meaning, would be slower or more difficult for a reader of eg. Finnish, the orthography of which reflects morphophonologically predictable surface phonological structures (cf. Lotz 1972:122).

"... it is only because of the poor development of our early literature that we have been able to improve our orthography quite successfully without breaking any historical ties, which elsewhere have been the worst hindrance for progress" (V. Kiparsky 1932:239). The almost complete letter/sound -relation in Finnish orthography can be attributed both to the competent developers of the spelling convention and to the sound pattern of Finnish itself: the number of phonemes in Finnish is such that, with only a few modifications of the basic characters the Latin alphabet has been sufficient for giving each sound a symbol of its own. The result has also been influenced by the fact that some of the phonetic phenomena of the language (ie. the so-called "long" vowels and consonants) have been interpreted biphonemically and have thus been spelt with two letters. It should be noted that the present spelling of double vowels and geminate consonants (eg. *muuta* 'something else'; *mutta* 'but') is also in accordance with the phonological interpretation: it is not necessary to postulate the distinctive feature of *quantity* in Finnish which would yield phonemes like /u/, /ū/, /i/, /ī/ etc. (since /tuli/ ≠ /tūli/ or /tili/ ≠ /tīli/ [1]. According to the current interpretation Finnish vowels and most of the consonants -though with many restrictions- can form combinations of two similar or different phonemes and thus produce "double vowels" and "double consonants", which are also longer in duration than a single sound. (The words *tuli* 'fire' and *tuuli* 'wind' are thus not distinguished by the phonological length of the /u/ but by the different phonological quantity of the first syllable, which is due to the latter word having an extra /u/ in the initial syllable! The lack of such suprasegmental phonemes in Finnish as tone, word stress or quantity (at least according to the current interpretation), which could not be represented as a linear string of segments, has also contributed to the present situation.

One important condition has to be met before Finnish orthography can be accepted from the point of view discussed above: the system can be considered theoretically valid and acceptable only if it is based on a correct and adequate phonemization of the language. It is superfluous to review the discussion on the Finnish phoneme paradigm here (for the

[1] /tili, tīli/ = [tili, ti:li] etc.

paradigm see Lehtonen, Sajavaara & May 1977:94, 127). It is more essential to consider more closely the weak points that Finnish orthography also seems to include, especially as regards the children's learning of reading and writing.

The following observations concern only the spelling of words which structurally belong to the basic native system of Finnish phonology. It goes without saying that recent loans (borrowed from eg. English), which have retained their original spelling, cause considerable difficulties both in reading and writing. The problems caused by these loans are discussed in greater detail in Chapter 5. Schoolchildren do not make spelling errors only in words of foreign origin or in the letter/sound combinations that are new in the language. Errors can also be found abundantly in the native vocabulary. Obviously the most common class of errors is the omission of a letter in certain word structures. This could even be regarded as a characteristic feature of Finnish orthography. Ruoppila, Röman & Västi (1969) in their analysis of the writing errors of schoolchildren in grade II or grade III of comprehensive schools have shown that the errors made by the children can be grouped around six factors, which are the following (the order is from the strongest to the weakest): (1) "missing letters" which include letters omitted from geminates and double vowels as well as other missing letters, but also reversals, rotations and a number of other errors (2) "unmeaningful word" (3) "wrong diacritic signs" (eg. *ö - o ; ä - a*) (4) "one word/ two words -errors" which also include the erroneous use of capital letters or small characters, and a number of other errors (5) "confusion between *m* and *n*" and (6) "the confusion between *nk* and *ng*"; this factor also includes an incorrect word-final letter. Most of the errors made by the grade II pupils and grade III pupils (viz. c. 50% of all errors) can be explained by the factor "missing letter". For example, 22.6% of the errors made by the grade II pupils consisted of letters omitted from geminate consonants (eg. *kuperkei_ka* pro *kuperkeikka* 'somersault', *kir_kaasti* pro *kirkkaasti* 'clearly' *kuninkaa_linen* pro *kuninkaallinen* 'royal', *mar_sirivistöön* pro *marssirivistöön* 'to the row of marchers').

9,7% of the spelling errors consisted of letters omitted from a double vowel (eg. *erä_nä* pro *eräänä* 'some', *lähitieno_n* pro *lähitienoon* 'of the surroundings', *a_llokko* pro *aallokko* 'the waves', *toma_tti* pro *tomaatti* 'tomato'). Finally, 17% of the errors were made by omitting a letter in some other position (eg. *sunnu_taiaamuna* pro *sunnuntaiaamuna* 'on a Sunday morning', *hii_tolenkin* pro *hiihtolenkin* 'of a skiing round', *vi_huen* pro *viuhuen* 'swishing' and *taka_sin* pro *takaisin* 'back') (Ruoppila & Västi 1971:37). In a dictation test constructed by Ahvenainen & Siirilä (1977: 32) the percentages of errors were as follows: 26,5% of the errors made by the grade II children were of the "missing letter" type, as were 34,4% of the errors made by the grade III pupils and 35,4% of the errors made by the grade IV pupils. When reading aloud the profile of errors is different and new types of error occur, which are not present in writing. However, the percentage of "missing letters" is high even in reading errors (11,7%; see Ruoppila & Västi 1971:32). Even if it is very difficult to compare different languages as regards the problems and errors involved in reading, it is possible to claim that missing letters are typically Finnish errors and possibly due, therefore, to an inadequancy in the relation of sounds and spelling in the language.

It must be noted that the percentage of errors provoked by the varying spelling of /ŋ/ (eg. *auriko* pro *aurinko* 'sun', *onnenkoukkuun* or *ogenkoukkuun* pro *ongenkoukkuun* 'hook') is only 7,0% and the percentage of errors caused by additional letters (eg. *kammpi* pro *kampi* 'crank', *sukkset* pro *sukset* 'a pair of skis', *ompellija* pro *ompelija* 'dressmaker', *pirinsessa* pro *prinsessa* 'princess') is also c. 7%. In the test carried out by Ahvenainen & Siirilä (1977:32) only 0,7% of the errors made by grade II pupils were /ŋ/ -errors and the percentages of these errors in grades III and IV were 3,6% and 6,5% respectively. Ahvenainen & Siirilä have recently tried to analyze the factors that influence the "acoustic spelling ability" (Finnish 'kirjoitettavuus') of Finnish words (the authors presumably use the term acoustic in the sense of "auditive", or rather "perceptual"). They have arrived at the conclusion that the basic unit in determining the difficulty index is the syllable. The more syllables there are in a word, and the more complex the syllables are structurally, the more difficult the word is to spell. Although the analysis of the authors appears to be unfinished as yet, especially as

regards the syllabic structures, the chain of reasoning could be carried on as follows: the quantity system of Finnish is essentially based on two syllabic quantities short and long. A short syllable is a syllable consisting of an optional initial consonant and no more than one vowel; if there is an additional vowel or a final consonant the syllable is called long (eg. *sa.ta* 'hundred' vs. *sai.ta* 'mean,tingy', *saa.ta* 'see off', *san.ta* 'sand'). A Finnish child may have certain difficulties in recognizing the phonological structure of these fundamental types, especially when two similar vowels or consonants are combined on a word boundary (eg. *mana* 'death' vs. *maana* 'as the earth' vs. *manna* 'manna'). On the average these basic structures are easily distinguished since eg. the durations within the final syllable provide a strong additional cue (cf. Lehtonen 1970:153- ; note, however, that syllabic quantity is remarkably less distinctive towards the end of a polysyllabic word). There are, however, three kinds of syllabic structures in Finnish which should be distinguished by their length (*ka.sa* 'heap', *kan.sa* 'people', *kans.sa* 'with'). A long and a short syllable are phonetically distinguished by almost all durations in "measure" (Finnish, 'tahti') which consists of two successive syllables (Lehtonen 1970:126, 130). On the other hand, there are hardly any concomitant identification cues that would help in distinguishing between the long and the over long syllables, by producing phonetic redundancy, in addition to the inherent quality and duration of one segment. [1]

It is therefore inherently difficult for a speaker of Finnish to recognize the structure of words that include overlong syllables, and thus most common errors in spelling can be expected to be those concerning syllabic quantity. Errors that have been proved to be typical of Finnish spelling are thus not necessarily due to a deficiency in the spelling convention but perhaps to a weak point in the linguistic system itself, viz. the complicated quantity system. It may sound ironic

[1] The exceptional position of over long syllables is also shown by their textual frequency: c. one third of the initial syllables of Finnish are short, c. two thirds are long and only 1,4% of the initial syllables are over-long (ie. five syllables in the sample of the 150 most frequent Finnish initial syllables, see Pesonen 1974:46)

that the durational system of Finnish – often described as ideally clear – proves in fact to be the Achilles heel of our language (for the difficulties in foreign language learning caused by the Finnish quantity, see Lehtonen, Sajavaara & May 1977).

5

The cases where the spelling of Finnish deviates from its "convergence to pronunciation" can be divided into two groups: (1) there is linguistic information in speech, that cannot possibly be conveyed by writing or (2) writing does not display all the phonological variation in the language. A detailed discussion on case (1) will not be necessary, since Finnish orthography is just as inadequate as any other system as a conveyor of the actual information in the spoken message. The paralinguistic content of speech and the information provided by gestures, expressions or movements cannot be made explicit in any orthography. Similarly, orthography can never make explicit such morphological, syntactic or semantic information, which in speech is conveyed through the changes of eg. stress, intonation or speech rate, (cf. Lehtonen 1976:19: Fig. 1). This information includes the textual relations of the sentences, topicalization, emphasis and also such phonetic phenomena, which are used to indicate a connection between words or phrases, and which cannot be made explicit in the spelling. As regards the syntactic cues that are segmental by nature, the possibilities of making them explicit in the spelling are better: sentence boundaries as well as compound and word boundaries can be indicated by punctuation or by blank spaces (eg. *lintuansa* 'his bird' vs. *lintu-ansa* 'bird trap'; *koulu-laiskuri* 'school idler' vs. *koululais-kuri* 'discipline of the pupils') Some examples of case (2) have been already given at the beginning of this article. Some of the most important points are that the phonological sandhi assimilation (*talonpoika* /talompoika/ 'farmer', *en mene* /emmene/ 'I won't go') and initial doubling ie. phonological doubling of the initial consonant on a word boundary caused by a phenomenon called 'jäännöslopuke', (eg. *mene pois* /meneppois/ 'go away' ) are not indicated in the spelling. Words like *ruuan, liian* /ruuan, liian/ can be regarded as solitary exceptions.

One of the crucial properties of phonological spelling is that the phonemic representation of the word can be predicted from the information included in the string of letters. No information is thus needed on the meaning of the word (as is the case in English: eg. <read> can be interpreted as /ri:d/ or /red/). Vice versa, the graphemic representation of the word can be deducted by depending on the phonological information only (but in Swedish eg. /ju:d/ can be spelt <jord> <gjord> or <hjord> depending on the meaning of the word). Finnish orthography is fully phonological only as regards the function of the basically native system of the language. Present usage has adopted many words of foreign or artificial origin, in which the relation of letters to sounds deviates from that of the native system. Among the features that are recently adopted are new grapheme/phoneme relations, with their concomitant irregularities, and also inconsistencies in symbolizing long consonants. An example of the previous feature is eg. <y> as a symbol of /i/ in a number of recent everyday words (*andy, baby, crazy, fifty-fifty, lobby, party, sorry* etc.), <w> as a symbol of /u/ (*show, know-how* etc.), the use of <x> as a symbol of /ks/ (*dixie, telex, expert, lux* etc.), and the insistance of <sh> as a symbol of /ʃ/ - which does not even exist in speech (eg. <shekki> /sekki/ 'cheque'). There are various other examples and most of the spellings are borrowed from the English orthography. Another group of irregularities consists of the graphic representations of so-called half-foreign sounds. The letters <b g f> are graphically represented in a vast number of items that have become established in present-day Finnish, and the graphemes will remain in the orthography regardless of the argument whether the sound should be included in the phoneme paradigm of Finnish of not. If - and when - the Finnish speaker does not realize the opposition p/b in his speech, the relation between spelling and pronunciation of these words is not phonological but morphophonological: we can choose between the spellings <baari> 'bar' and <paari> 'stretcher' only after we know the meaning of /paari/ in a particular utterance. Of course the same applies to the previously mentioned items *Andy, crazy, show*; first we must recognize /ändi kreisi sou/ as 'foreign' words, after which it is possible to spell them correctly by applying special rules that concern only these words.

The gradation of the stop consonants within the stem that occurs in native words also causes uncertainty in the spelling of the new vocabulary. Should <alfa, beta, data, delta, filter, fortis, shampoo, Costa Rica, sparta, sulfa> be pronounced with a single consonant or /alffa, beetta, daatta, deltta, filtter, forttis, samppoo, kosta riikka, spartta, sulffa/? The latter pronuciation seems to be favoured by most speakers of Finnish. Should the spelling of these and similar words be changed towards the common pronunciation or can the typically Finnish tendency of gemination be rooted out from the new vocabulary by careful instruction in language usage? Or, should the irregular relationship between spelling and sound be tolerated in cases like these? (For the origin of the geminative tendency, see Kettunen 1959:22-2 ) [1] Still more controversial is the relationship between the geminate sound and the single letter in the inflection of new loan words ending with an obstruent. The "correct" spelling and hence the "correct" pronunciation is eg. *Fiat:Fiatia, folk:folkia, rock:rockia (rok:rokia), pop:popia* etc. (the inflected form in each word pair is the partitive case of the word), though probably every Finnish speaker says: /fiattia folkkia rokkia poppia/.

The phenomena discussed above are caused by a continuously increasing influence of foreign language and culture on the Finnish language and Finnish orthography. It is difficult fo find a way of controlling the new vocabulary and new concepts, and they also bring new norms for the orthography with them. Written language can no more be regarded only as a vehicle - used by a small number of representatives of the "upper class culture" - of recording and distributing information. It is a medium for conveying information and a means of everyday communication between people. But it is also an essential part of our present environment. Letter strings and various texts have become a part of the modern milieu: they can be compared to various other objects, designs and institutions in this milieu. It would be unrealistic to imagine that words and texts in English or in

[1] In its meeting on 13 th September, 1976 The Finnish Language Board considered that the convergence of spelling and pronunciation should be further emphasized. The "correct" pronunciation is thus /alfa sulfa data/, not */alffa sulffa daatta/. The present author has submitted in January 1976 an article on the topic for the Finnish Language Board, to be published in the linguistic quarterly *Virittäjä*.

some other foreign language could be wiped out of advertising, trade marks, labels, the television screen or the pages of newspapers. It would also be naive to believe that the international jargon of trade, technology, science or entertainment would touch the Finnish language and its orthography only superficially and that it would conform immediately to the norms and the restrictions of the earlier native system.

There are thus two levels in the orthography as well as in the spoken language of Finnish: there is the inner, strictly phonological, spelling principle, which applies only to words that belong to the native morphological system. Then there are a number of recent spelling conventions that can be applied only to the new vocabulary, and the application of which is determined by morphophonological rules. The present development does not necessarily mean that the "convergence to pronunciation" of Finnish orthography would be extinguished. It only means that the orthographic system will have several layers, much in the same way as the European languages of older literary tradition have them already.

The question of the adequacy and excellence of the Finnish orthography does not ultimately concern Finnish only. The same arguments can be presented in the evaluation of any phonological spelling system and its possible alternatives. On the one hand, one has to consider the support for variety in the spoken language and toleration of various pronunciations as well as the internationalism, which are all pros for morphophonological spelling (eg. English or Japanese). On the other hand, the easy and rapid acquisition of reading and writing among children is undoubtedly a pro for phonological spelling. The "convergence to pronunciation" of Finnish orthography, and its nearly complete phonologicality could perhaps be retained - or sooner regained - by means of intensive instruction in language usage. However, even if Finnish orthography went through the same changes that the spelling systems of some other languages of Europe have already partly undergone, the result would not necessarily be a change for the worse. Language is constantly changing and the norms and ideals of the speakers are changing with it.

6

Even if the differences in the orthographic systems of two languages are often excluded from phonetic-phonological contrastive studies, they are still a factor which cannot be ignored in the analysis of pronunciation teching and the linguistic background factors of learning. The errors and problems in pronunciation may be due just as much to differences in the orthographic system as to the differences in the sound system. The relation of sound and spelling in a specific language is a potential source of errors for a Finnish speaker especially, since Finnish is spelt phonologically - in contrast to several other spelling systems.

Due to his own letter/sound system the Finnish speaker may automatically employ his own rules in the pronunciation and perception of a foreign language and these rules imply that every letter in written text must also be pronounced. In learning a foreign language, however, it is absolutely necessary to perceive that the relation of the written signs to the sounds in the spoken language may be different from the relation prevailing in the native language. If the relation between sounds and spelling in a foreign language deviates from that of the native language, and this is not realized by the speaker, he may tend to perceive an utterance he hears as a sound sequence that corresponds to the letter string in the graphemic representation of the word, and he may also produce the word according to the same rule.

Thus not only the phonological system of the native language, but also a spelling convention deviating from one's own may also lead the speaker astray e.g. as regards the length of the sounds. In German (as in Swedish) the length of the consonant does not have a distinctive function, so that the combination of two similar consonants can be seen as a symbol of the short quantity of the preceding vowel (eg. German *kam/Kamm*). A consonant that follows a short vowel has a slightly longer duration than a consonant that follows a long vowel, but the duration is still not as long as the duration of the Finnish geminate symbolized by two letters in orthography. Therefore, it is a typically Finnish error to lengthen a German consonant that follows a short a short vowel: * [gas:e kom:en fyl:en]. This error may be due either to an over differentiation in the

perception of the durations, with a resulting substitution, or it may be due to the influence of spelling: it is customary for the Finnish speaker to produce a geminate where there are two consonant letters in written text.

An important function of phonetic transcription in language teaching is not only to help to pronounce correctly but also to help to hear correctly. With the help of a transcription prepared to support the written text, the pupil can learn 'to hear' the same sequence of segments in an utterance as a native speaker. A phonetic transcription is particularly useful when the relation between the letters in orthography and the phonemes in an utterance in a foreign language differs from that of the native language. The more unphonological the orthopraphy of the foreign language is, the more reasonable it is to employ phonetic transcription in teaching: one of the primary functions of transcription is to show how an utterance can be analyzed as a sequence of successive distinctive sound units.

A typical pronunciation error caused by an erroneous interpretation of the spelling, is the pronunciation of <h> in certain German words: the grapheme <h> in words like *gehen* or *Mühe* is understood as a symbol of a voiced laryngeal spirant, in accordance with Finnish pronunciation in words like *maahan* or *saha*. Thus the German words are pronounced *[ge:ɦen my:ɦe] (cf. Finnish [ma:ɦan saɦa]). It is probable that the speaker not only uses [h] because he is inspired by the graphemic representation in his own speech, but also because he hears an imaginary [h] in native German speech as well. The correct pronunciation [ge:ən my:ə], provided in connection with the graphemic representation would facilitate the correct perception of the word and would also provide cues for the correct pronunciation.

One source of errors connected with the relation of written and spoken language is the fact that a single letter may be used to signify a different sound in different languages. The spelling of a foreign language may be just as phonological as the spelling of the native language, but the physical sounds symbolized with the same letter may be different in the two languages. In Finnish orthography the letter <o> symbolizes [o] in speech, but in Swedish orthography - with few exceptions - it symbolizes [u]. The letter <u>, on the other hand, is the symbol of [u] in Finnish,

but [u] in Swedish. Claims cannot be made that either of the spellings would be more correct or more phonological, for in both languages a certain letter is systematically used to symbolize a certain sound.

Due to the intimate relationship between spelling and phonology in Finnish, the letters are, for the Finnish speaker, written reflections of his inner secondary articulation of words into distinctive units. Therefore the symbolic value of a letter is more intact for a speaker of Finnish than it is for a speaker of a language in which the orthography follows the segmental principle less accurately. With Finnish speakers foreign language learning normally involves a process to which little attention has been paid, viz. the learning of a more abstract and more linguistic approach to the written symbols of the foreign language.

BIBLIOGRAPHY

Ahvenainen, O. and P. Siirilä 1977. *Suomen kielen kirjoitettavuudesta ja virheellisestä oikeinkirjoituksesta.* Research report 17/1977. Special education teacher training. University of Jyväskylä.

Bolinger, D. 1975. *Aspects of language.* 2nd edition. New York. Harcourt Brace Jovanovich.

Chomsky, C. 1970. Reading, writing, and phonology. *Harvard Educational Review* 40,2: 287-309.

Chomsky, N. and M. Halle 1968. *The sound pattern of English.* New York. Harper & Row.

Cooper, C. R. and A. R. Petrosky 1976. A psycholinguistic view of the fluent reading process. *Journal of Reading* 20,3: 185-207.

Cronnell, B. A. 1972. Spelling-sound relations in ESL instruction. *Language Learning* 22,1: 17-27.

Dieth, E. 1950. *Vademekum der Phonetik.* Bern A. Francke.

Downing, J. 1973. Comparative reading: a fourteen nation study, in *Reading for all*, ed. Karlin. Newark. Delaware.

Downing, J. 1972. *Comparative reading.* New York. Macmillan.

Fonetiikan Paperit 1973. III fonetiikan päivillä Oulussa 14.-15.4.1973 pidettyjen esitelmien tiivistelmät. Oulun yliopiston fonetiikan laitoksen monisteita 3.

Ikola, O. 1968. Suomen kielioppi ja oikeakielisyysopas, in *Suomen kielen käsikirja*, ed. O. Ikola. Helsinki. Weilin & Göös.

Karlsson. F. 1976. *Finskans struktur.* Lund. Liber läromedel.

Kiparsky, V. 1932. Johdatusta fonologiaan. *Virittäjä* 1932: 230-250.

Kyöstiö, O. K. 1967. Reading research at the Kindergarten level in Finland in *The second international reading symposium*, eds. J. Downing and A. L. Brown. London.

Kyöstiö, O. K. 1972. Finland, in *Comparative reading*, ed. Downing. 308-318.

Lado, R. 1957. *Linguistics across cultures.* Ann Arbor. The University of Michigan Press.

Lee, W. R. 1960. *Spelling irregulary and reading difficulty in English.* London. National foundation for educational research in England and Wales.

Lehtonen, J. 1970. *Aspects of quantity in standard Finnish.* Studia philogica Jyväskyläensia VI. University of Jyväskylä.

Lehtonen, J. 1976. Kieli, puhe ja viestintä, in *Puheopin näkökulmia*, eds. A. Sallinen-Kuparinen and J. Lehtonen. Jyväskylän yliopiston suomen kielen ja viestinnän laitoksen julkaisuja 13: 17-30.

Lehtonen, J. and K. Sajavaara and A. May 1977. *Spoken English. The perception and production of English on a Finnish-English contrastive basis.* Jyväskylä. Gummerus.

Lotz, J. 1972. How language is conveyed by script, in *Language by ear and by eye*, eds. J. Kavanagh ja G. Mattingly. Cambridge, Mass. The MIT Press. 117-124.

Massaro, D. 1974. Primary and secondary recognition in reading, in *Understanding language*, ed. D. W. Massaro. New York. Academic Press.

Oller, D. K. and R. E. Eilers 1975. Phonetic expectations and transcription validity, *Phonetica* 31: 288-304.

Penttilä, A. 1963. *Suomen kielioppi*. Toinen, tarkistettu painos. Porvoo - Helsinki, WSOY.

Penttilä, A. 1932. Grafeema- ja foneemasuomen suhteesta. *Virittäjä* 1932: 16-26.

Pesonen, J. 1974. *Yleisimmät tavut kielen alkeispedagogiikassa*. Research reports n:o 13/1974. Department of special education. University of Jyväskylä.

Pike, K. I. 1947. *Phonemics*. Ann Arbor. The University of Michigan Press.

Platzack, C. 1973. *Språket och läsbarheten*. Lund. Gleerups.

Read, C. 1973. Children's judgements of phonetic similarities in relation to English spelling. *Language Learning* 23,1: 17-38.

Reed, D. R. 1970: A theory of language, speech, and writing, in *Readings in applied transformational grammar*, ed. M. Lester. New York. Holt, Rinehart and Winston. 284-304.

Ruoppila, I. and K. Röman and M. Västi 1968. *KTL:n diagnostisia kirjoituskokeita peruskoulun II ja III luokille. Kokeiden standardointi ja kirjoitusvirheiden faktorianalyyttinen tutkimus*. Reports from the Institute for educational research 50/1968. University of Jyväskylä.

Ruoppila, I. and M. Västi 1971. *Luku- ja kirjoitushäiriöisten oppilaiden lukemisen ja kirjoituksen virheiden rakenne sekä virheiden yhteydet eräisiin kognitiivisen kehitystason muuttujiin*. Reports from the Institute for educational research 81/1971. University of Jyväskylä.

Sebeok, T. A. 1944. Phonemes and orthography in Finnish. *Acta Linguistica* IV: 130-135.

Wiik, K. 1973. *Taksonomista fonologiaa*. Publications of the Phonetics: Department of the University of Turku 14.